

electrical discharges.—Dr. A. M. Mayer contributes an article "On the physical condition of a closed circuit contiguous to a permanent and constant Voltaic current; or, on the electro-tonic state." The author commences by giving extracts from Faraday's investigations, in which he uses the term electro-tonic state to indicate the condition of a wire in which an electric wave has been induced by the proximity of a conductor through which a constant current was passing. He has endeavoured to obtain some clue of the condition of such a closed circuit by passing through it another electric wave of a constant intensity, and which he ingeniously generated by slipping a flat spiral from the end of a permanent magnet, as described in the number of this journal for November last. Currents thus obtained are found, by means of a delicate reflecting galvanometer, to be practically of the same intensity; for on repeating the experiment several times this produced deflections differing from one another to an extent not greater than 20". In this manner it was determined that a definite electric current, traversing a metallic circuit in proximity to another traversed by a powerful voltaic current, has the same intensity, whether passed in the same direction as the latter or in a direction opposed to it. The author thinks, however, that a diminution in the velocity of the current ensues, and he intends to continue his experiments in order to settle this question.—This paper is followed by an abstract of the "Programme for the Observation of Stars of the Ninth Magnitude, undertaken by the German Astronomical Society; an analysis of gahnite from Mine Hill, Franklin Furnace, New Jersey, by G. J. Brush; and an account of the Observations of the Meteors of November 13 and 14, 1870."—The next article is by Prof. J. Le Conte, "On some Phenomena of Binocular Vision," in continuation of some previous papers. For examining the effects produced on observing objects with both eyes, the author employs a white plane about twenty inches long and of any convenient width. A notch is cut at one end of the board to enable the operator to place the plane just below the level of the eyes, the notch fitting on the bridge of the nose. By sticking pins on different parts of the board and drawing lines between the pins and the eyes, the phenomena of vision can be investigated. The author points out that when things are looked at with both eyes, the eyes themselves seem to double, two of them combining to form a binocular eye in the middle which looks out between two noses, while the other two are on either side beyond the noses. This article is well worth perusal.—The next paper is by Sidney I. Smith, "On a Fossil Insect from the Carboniferous Formation of Indiana," and is illustrated by a woodcut representing a wing 2.54 inches long and 0.85 broad, found in the grit quarry near Paoli, Orange County, Indiana, in cutting the stone for making whetstones.—Observations on the Earthquake of October 20th in North-eastern America have been collected by Mr. A. C. Twining. The area of disturbance extended from New Brunswick in the East to the State of Iowa in the West, and from the lakes of the River St. Lawrence in the North to Cincinnati and Richmond, Va., in the opposite direction. The shock travelled from about E. 6° N. to about W. 6° S. at the rate of 160 miles in a minute.—The concluding article is by Professor A. E. Verrill, "On some imperfectly known and new Ascidians from New England."

Silliman's Journal, February, 1871. This number opens with a paper by Dr. A. M. Mayer, "On Observations on the Variation of the Magnetic Declination in connection with the Aurora of October 14, 1870, with Remarks on the physical connection between changes in area of disturbed solar surface and magnetic perturbations." The aurora was first noticed at 6.30 P.M. on October 14, and the magnetic observations commenced at 6.35 P.M. and were continued till 10 P.M. The mean declination being represented by 0°, at 6.35 P.M. the declination was 5° 70' W. and at 6.56 P.M. 18° 37' W. The magnet then rapidly moved towards the E., and at 7.46 the declination was 21° 94' E. The motion now became westerly, and at 7.57½ P.M. the reading was 32° 19' W. There was next a rapid easterly movement till 8.5½ P.M., when the reading was 10° 42' E., deep rough streamers flashing up in the N.N.W. There was another deviation to 4° 55' W. at 8.10 P.M., after which the needle passed to the east of the neutral line, and, after several oscillations, reached the maximum easterly deviation of 22° 52' E. at 9.10 P.M. The author makes daily observations of the spots on the sun, and remarks on the connection existing between their appearance and magnetic disturbances. He points out the necessity of establishing several stations, where daily photographs of the sun may be taken.—The next communication is the first part of a series of "Notes

on Granite Rocks," by T. Sterry Hurst, LL.D., F.R.S. This paper is continued in the numbers of the Journal for March, and its extraction may perhaps be more conveniently deferred until the whole of it has appeared.—Mr. E. D. Cope contributes a short note on "Siredon Metamorphoses."—This is followed by a note by Professor G. B. Andrews, "On Lower Carboniferous Limestones in Ohio," and the conclusion of Professor Verrill's "Descriptions of Ascidians from New England."—This number also contains a "Memoir of Professor Graham, by Professor J. N. Cooke, and a "Description of the Auroral belt of October 24-25, as observed at New Haven."

SOCIETIES AND ACADEMIES

LONDON

Royal Institution of Great Britain, April 3.—Mr. Warren De la Rue, F.R.S., vice-president, in the chair. Mr. William Cubitt, Mr. William Gould, Mr. Robert Hannah, Mr. John Henry Mackenzie, Rev. John Macnaught, M.A., Mr. Joseph Reynolds Masters, Mr. George Borwick Robertson, F.C.S., and Mr. George Wilson, were elected members of the Royal Institution. The special thanks of the members were returned for the following donation to "The Fund for the Promotion of Experimental Researches:—Mr. T. Williams Helps (6th donation), 10l.

Entomological Society, April 3. Mr. A. R. Wallace, president, in the chair.—The Secretary exhibited drawings of Chinese Lepidoptera, beautifully executed by Mr. Holdsworth, of Shanghai.—Mr. F. Smith exhibited several examples of gynandromorphous Aculeata Hymenoptera, including *Anthophora acervorum*, *Andrena nitida*, *Nomada baccata*, and *Apis mellifica*, the latter combining the characters of male and workers. Mr. Lewis referred to the damage occasioned to books by *Lepisma saccharina*, which fed upon the paste of the bindings, and caused them to fall to pieces. Mr. Lewis also read a paper on the arrangement of British Lepidoptera, as adopted by various authors and compilers of catalogues, and he deprecated very strongly the constant changes in arrangement and nomenclature that are being made, the writers in many cases failing to give any reasons for such changes.

Anthropological Institute, April 3.—Sir John Lubbock, Bart., president, in the chair. Messrs. F. W. Rudler and Archibald Hamilton were elected members. Mr. Boyd Dawkins read a paper "On the results obtained by the Settle Cave Exploration Committee." Victoria Cave, near Settle, in Yorkshire, is situated half-way up a cliff 200 feet high, and consists of a series of large chambers and passages, and has from time to time furnished to its explorer, Mr. Jackson, a remarkable collection of ornaments and implements of bronze, iron, and bone, along with pottery and broken remains of various animals, viz., red-deer, roebuck, pig, horse, sheep, goat, badger, fox, and dog. Fragments of Samian ware and coins of Trajan prove that the stratum in which they were discovered was accumulated subsequently to the Roman invasion. The numerous articles and bones were described in full detail. The author concluded that the cave was first inhabited by a barbarous Neolithic family, and, lastly, after a long interval, by Roman provincials, or possibly their descendants fleeing away from the arms of an invader.—A paper by Dr. Barnard Davis, F.R.S., was read, "On some recent Anatomical Writings bearing upon Anthropology, by Prof. Luigi Calori, of Bologna;" principally on the magnificent memoir of that anatomist, "Del Cervello, nei due tipi Brachicefalo e Dolicocefalo Italiani," lately published. That work is divided into four parts:—1. On the figure of the Brain in the two types. 2. The cerebral convolutions; their various aspect and their variety or anomalies. 3. On the weight of the brain in the two Italian types, brachycephalic and dolichocephalic. 4. On the extension of the cerebral superficies in the two Italian types. The second article goes into a thorough examination of the cerebral convolutions and the varieties they present.—Mr. A. L. Lewis contributes a paper "On the builders of the Megalithic Monuments of Britain." A special general meeting of the members of the Institute was held previously for the purpose of adopting the regulations proposed by the Council. Trustees of the Institute were elected, viz., Sir John Lubbock, Bart., president; J. W. Flower, treasurer; and the Rev. Dunbar J. Heath, M.A.

Zoological Society, April 4.—Mr. R. Hudson in the chair. Mr. W. Saville Kent read a paper on some new or little known Madreporæ contained in the collection of the British Museum, amongst which were new species of the genera *Acanthocyathus*, *Flabellum*, *Stylaster*, and *Allopora*.—A communication was read from Surgeon Francis Day containing a series of notes on some of the rarer and less-known of the Siluroid fishes of India.—A communication was read from Mr. G. Stewardson Brady containing a review of the known *Cypridinidæ* of the European seas, together with a description of a new species of the genus *Philomedes*, proposed to be called *Ph. folinii*.—A communication was read from Dr. J. E. Gray containing additional notes on *Rhinoclemmys mexicana*, a Mexican Tortoise recently described by him in the Society's "Proceedings."—A second communication from Dr. Gray contained some additional notes on the genera *Eupleres* and *Galidia*, and a note on *Lemur ruber*, founded on specimens of these animals lately procured in Madagascar by Mr. Crossley.

Linnean Society, April 6.—Mr. G. Bentham, president, in the chair. The president read a paper on the styles and stigmas of Proteaceæ. In plants belonging to this order, the anthers mostly discharge their pollen before the expansion of the flower, as is also the case in Compositæ. In this latter order self-fertilisation is prevented by the fact that the stigmas are on the under face of the style branches which remain hermetically closed until after the opening of the flower. In Proteaceæ, on the other hand, the style is undivided, and the stigmatic surface is exposed even in the bud; and the contrivances to screen it from the action of the pollen of its own flower are very various. The observations have been made, with but few exceptions, on dried plants, and require confirming or rectifying by those who have the opportunity of examining the living plants. The anthers generally form, as in Compositæ, a closed tube surrounding the stigma, which is, however, usually if not always immature at the time of the extension of the pollen. That self-fertilisation seldom if ever takes place is shown by the fact that in no genus is the style more completely smothered with pollen than in *Banksia*, while there is none in which fecundated fruit is rarer. In *Petrophila* the stigmatic surface consists of the minute tip of the style, which is, however, completely protected while in the bud from the action of the pollen by the perianth segments. In one section of *Persoonia* the style is completely turned away from the anthers, and the stigmatic point is buried in a pouch prepared to receive it. The anther immediately over this pouch is sometimes destitute of pollen. In *Banksia* and *Grevillea* there appears to be no protection against self-fertilisation except the immaturity of the stigma. In *Conospermum* and *Synaphea* one anther in each flower has two perfect cells, separated by a connective; in the two lateral stamens there is one perfect and one abortive cell; and in the fourth there are two abortive cells, the cells are open cups; the perfect one of each lateral anther applied face to face with the adjoining cell of the double anther forms with it a closed globe in the bud, opening as the flower expands so as to let fall the pollen, the style projects far beyond with the stigmatic surface bent towards the upper perianth segment in the bud. In *Conospermum*, where the upper anther has two perfect cells, and the lowest is abortive, the style recurves elastically as the flower opens, so as to direct the stigma towards the abortive anther; in *Synaphea*, where the upper anther is abortive and the lowest perfect, the stigma is retained in its primitive position over the abortive anther by a strap-shaped appendage proceeding from the rudiment of that anther and firmly attached to the lower margin of the stigmatic disc.—"On the Generic Nomenclature of Lepidoptera." By J. D. Crotch.

Chemical Society, March 30.—Prof. Williamson, F.R.S., president, in the chair. The president delivered the following address:—"Gentlemen, I feel much pleasure in congratulating you on the rapidly increasing prosperity of our society, and the enlargement which has taken place in its sphere of usefulness. For on the one hand the number of our fellows continues to show a most satisfactory increase, and on the other hand your Council has made arrangements for carrying out the system of monthly reports, which has been for some time in contemplation. It was hoped that the Chemical Society of Paris might, from the first, co-operate with us in the preparation of these monthly reports, but circumstances beyond their control have prevented the sister society from joining us in the beginning of this year. Deeming it undesirable to delay the commencement of the reports, your Council still look forward

to the future co-operation of the Paris Society in their preparation. You are aware that the present available income of the society was not considered to be sufficient to defray the additional expense of writing and printing these reports, and I have the pleasure of informing you that contributions to the extent of 1,175*l.* have been promised by members of your body towards supplying the defect during the first five years of the appearance of the reports. The British Association has moreover granted us the sum of 100*l.* for this year in aid of the undertaking. We hope that in five years the funds of the society may have sufficiently increased to enable us to pay the whole expense of the reports, and that their publication will be valued by the members of our society, and promote the advancement of our science wherever the English language is read."

EDINBURGH

Royal Physical Society, March 22.—Mr. W. C. Peach, President, in the chair. Note on Carbon, showing ligneous Structure in Coal (with illustrative diagrams). By Professor Duns.—Mr. A. Taylor exhibited some undescribed Fossils from the Gilmerton Coalfield.—Remarks on some Japanese Skulls. By Dr. John Kennedy.—On Successive Glacial Periods, caused by Changes in Physical Geography. By Mr. Andrew Taylor.—Mr. C. W. Peach exhibited and described a few Zoophytes and Algæ, gathered on the shores by Port Phillip, near Melbourne.—Mr. Peach had to enter on a new field, and unfortunately had no works either on Australian Zoophytes or Algæ, beyond Busk's excellent catalogue of the Zoophytes contained in the British Museum, and part of a paper of Professor Wyville Thomson on some from Australia. He therefore regretted that his paper would come before them in an imperfect state. He first noticed several species of *Catenicella*—large masses of all were exhibited, as well as small portions on black paper prepared for the microscope—showing how luxuriantly these delicate animals built up their lovely homes. This genus is found plentifully on the shores of Africa, New Zealand, and Australia, but not in British seas, evidently being confined to warmer climates. He also introduced to the members several species of *Salicornaria*, *Cellularia*, *Menipea*, *Scrupocellaria*, *Ætua*, *Bicellaria*, *Retepora*, *Flustra*, *Leprealia*, *Cresia*, *Crisidia*, *Serialaria*—altogether more than twenty species.

GLASGOW

Geological Society, February 2.—Mr. J. Young, V.P., in the chair.—Mr. Robert Craig read a paper "On the Boulders found in Cuttings on the Beith Branch Railway." The line of railway referred to runs nearly south-east from Beith. The striations upon the glaciated rock-surfaces of the district have a general bearing of nearly N.E. to S.W.; the line accordingly at its western terminus crosses them almost at right angles. The cuttings run nearly parallel to the southern termination of the range of trap hills which extends from Gleniffer to Beith, and at the distance of little more than a mile from it. The Carboniferous strata crop out along the southern boundary of this trap range, and consequently about a mile to the north of the railway. In the trap range four well-marked varieties of porphyry occur, which, with the easily-distinguished beds of the Carboniferous limestone, gave the geologist an opportunity of classifying the boulders and tracing them to their source with an exactitude not always attainable. Mr. Craig then read a table giving the percentage of the different kinds of boulders found in eight cuttings proceeding eastward from Beith, and showed that the changes which were observable in them always corresponded with the rocks to the north-east of the cuttings. This strictly local character of the boulder-clay he thought was strong proof that it was due to land-ice—that, in fact, it had been taken up and deposited as the glacial "foot-board moraine." Droppings of sea-ice would have consisted much more largely of rocks from a distance. A small percentage of travelled rocks undoubtedly occurred in the boulder-clay of the district; and this, it must be noted, in all parts of the deposit—at bottom, middle, and top. These erratics he supposed to have been dropped from time to time through fissures and crevasses of the ice during its progress. From some sections in which he had followed the direction of the ice-stream, he found there was a change in the boulder-clay every three to five miles, less or more according to the roughness or evenness of the ground. He recommended a more minute examination and comparison of the boulder-clays of different localities than had yet been effected.

March 2.—Mr. John Young, vice-president, in the chair. Mr. E. A. Wunsch read a paper on a section of the northern shore of Arran, giving an account of some transported blocks of limestones which he had observed there during the previous summer. After describing the remarkable succession of deposits which had made that part of Arran classic ground for the geologist, he referred more particularly to a characteristic bed of limestone found near the Salt Pans, on the north-eastern shore of the island. This limestone is of a deep red colour, and is full of the shells of *Producta*—especially *Producta latissima*—together with fragments of *Encrinites* and other organisms. The bed is very regularly jointed, and breaks up into beautiful cubical masses.—Mr. James Thomson read a paper on the occurrence of *Stigmara stellata* (Eichwald) in the lower Carboniferous series, at Wildshaw, in the Upper Ward of Lanarkshire. He described the position of the strata in which these plant-remains had been found—in beds of fire-clay and indurated sandstone, capping those thin bands of limestone which characterise the lower members of the Carboniferous series in Scotland. The section presented at Wildshaw was as under:—6 ft. calcareous shale; 3 ft. hard light greyish sandstone; 2 ft. fire-clay, containing portions of *Stigmara*; 3 ft. highly indurated sandstone, or chertzite, into which the *Stigmara* roots passed; 11 ft. thin banded limestone, with partings of calcareous shale interstratified. Mr. Thomson mentioned that remains of this variety of *Stigmara* were of comparatively rare occurrence in the Scottish coal fields—he had only found them in two other localities, and always in the same geological horizon. He pointed out that *Stigmara* were now generally admitted to be the roots of the *Sigillaria*, but in this case he found them associated and in contact with what some authorities had called *Norea taxina* (?). The specimens on the table presented very distinct stellate markings which had surrounded the rootlets at the base of attachment.

BERLIN

Royal Prussian Academy of Science, August 11, 1870. —A paper was read by Dr. Hugo Kroecker, on the law of the exhaustion of muscles.—Prof. W. Peters communicated descriptions of some new reptiles and Batrachia, including *Hemidactylus muriceus* from Guinea, *Cercosaura glabella* from Brazil, forming the type of a new subgenus *Urosaura*, *Tropidolepisma striolatum*, from N.E. Australia, *Geophis annulatus* from South America (?) *Urieichis lineatus* from Guinea, forming the type of a new subgenus *Metopophis*, *Scaphiophis albopunctatus* from Guinea, the type of a new genus allied to *Zamenis*, and *Horlocephalus frenatus* from N.E. Australia. The Batrachia described include the types of two new genera, namely, *Entomoglossus pustulatus* and *Cophomantis punctillata*, both from Brazil; the other species are *Rana longirostris* from Guinea, *Cystignathus diplostris*, *Hylodes Henselii*, and *H. rugulosus* from Brazil, *Arthrolepis dispar* from Prince's Island, and *Phylllobates verruculatus* from Mexico. Figures of most of the species accompany the paper. Prof. Braun presented a most elaborate memoir on the genera *Marsilia* and *Pilularia*, containing a tabular synopsis, and full synonymic and distributional revision of the species.

October 10.—The only scientific papers read were two on subjects connected with the higher mathematics, by MM. Kenner and Schwarz.

November 3.—Prof. Gustav Rose communicated some notes on the fall of a meteorite at Murzuk, in Fezzan.

November 27.—Prof. Dove presented a paper on the annual distribution of rain in central Europe.

December 1.—M. Kummer read a memoir on a peculiarity of the unities of the complex numbers obtained from the roots of the equation $\alpha^\lambda = 1$; and M. Kronecker appended to this paper a further note on a part of the subject treated of by M. Kummer.

December 5.—Prof. Reichert read a continuation of his memoir on the Skeleton of the Vertebrata, relating principally to the Myxinoideæ, Leptocephalidæ, and Cartilaginous Ganoids, *Protopterus anguilliformis* and the *Chimæra*.

December 15.—Prof. Roth read a paper on the Theory of Metamorphism and the production of the crystalline slates.—A memoir on the principal tangential curves of the Kummerian surface of the fourth degree, with sixteen nodal points, by Dr. F. Klein and Dr. S. Lie, was communicated by Prof. Kummer.

December 22.—Prof. W. Peters communicated a monographic revision of the Chiropterous genera *Nycteris* and *Atalapha*. The

author reunites to the genus *Nycteris*, originally established by Geoffroy Saint Hilaire, the groups *Nycterops* and *Petalia*, which have been separated as distinct genera by Dr. Gray; he also remarks that many unnecessary species have been established in it. He describes and gives the synonymy of 9 species and figures the typical form (*N. Hispania*) and the lower dentition of all of them. Two new species are described, namely *N. angolensis* and *N. damarensis*. The species of the genus *Atalapha*, which figure in the works of various authors under the genera *Scotophilus*, *Lasiurus*, and *Nycticejus*, are very difficult to discriminate satisfactorily; Prof. Peters recognises 11, of which 3 are described as new, namely, *A. Frantzii*, *A. pallescens*, and *A. egregia*. All the species are American, and the type is *A. novaboracensis*.

January 9 and 12, 1871.—M. Kronecker read two mathematical papers, of which no details are given.

January 19.—Prof. Ehrenberg communicated a review of the investigations made since 1847 on the abundant organic life borne invisibly by the atmosphere, as a supplement to his former memoirs on trade-wind, dust, and blood-rain. Since 1847 no less than 186 cases of the occurrence of these phenomena have been observed, and 42 samples have been submitted by the author to examination. He considers that the results of these investigations bear out his former conclusions.—In connection with this Prof. Dove communicated some observations on the "Föhn" observed at Trogen on the 13th February, 1870

VIENNA

Imperial Academy of Sciences, January 12.—Prof. Hlasiwetz communicated a memoir by Dr. E. von Sommaruga on naphthylpurpuric acid and its derivatives. This acid is produced from dinitronaphthole, by the action of cyanide of potassium; it is incapable of its being isolated from its salts. When the latter are prepared in aqueous solution, a blue compound is formed simultaneously. This was first observed by Hlasiwetz, and the author named it indophane. In alcoholic solutions it is not produced.

January 19.—Prof. L. Pfaunden presented a memoir on the elementary deduction of the fundamental equation of the dynamical gas theory; and Prof. A. Lieben communicated the result of an investigation made by himself in conjunction with M. Rossi, upon formaldehyde and its conversion into methylic alcohol. The author found that the product of the dry distillation of formiate of lime (formaldehyde) was converted into methylic alcohol by nascent hydrogen.

February 3.—A paper on the barytes of the ferriferous Lower Silurian and Carboniferous of Bohemia, and on baryte in general, by M. R. Helmhacker, and one on the increase of curvature of an oblique section of a surface, by D. K. Exner were read.—Mr. Karl Fritsch presented a comparison of the time of the flowering of the plants of North America and Europe, from which it appears that the lines of simultaneous flowering lie 5°–10° further south in America than in Europe. Elevation seems to have comparatively little influence.—A note from M. Max Schaffner was read, describing a method of obtaining thallium on a large scale from the dust produced during the roasting of iron pyrites.—Prof. Brücke communicated a new method of separating dextrine and glycogen from animal fluids and tissues.—Prof. Stefan presented a memoir on the influence of heat on the refraction of light in solid bodies, containing a series of determinations of the refraction of rock-salt, sylvine (perchloride of potassium), alum, fluorspar, and glass, at temperatures of 12°–94° C. (53°–201° F.). The refractive power of the first four bodies decreases uniformly, and for all parts of the spectrum, with the increase of temperature; the refractive power of glass increases with the temperature, and the increase becomes greater in passing from the red to the violet end of the spectrum. The alterations calculated for the line *D*, and an elevation of temperature of 100° C are:—

Rock-salt ...	...	...	...	0.00373
Sylvine ...	...	...	...	0.00345
Alum ...	...	...	...	0.00134
Fluorspar ..	...	...	...	0.00123
Glass ...	...	...	...	0.00023

M. K. von Littrow communicated a memoir by M. L. Schulhof, on the determination of the orbit of the planet (108) Hecuba.—Prof. Hlasiwetz briefly communicated the results of a nearly complete investigation of Liebig's Extract of Meat made in his laboratory by Dr. J. Weidler. This extract is found to contain a previously unknown nitrogenous compound, having the formula

$C_7H_8N_4O_3$, and therefore most intimately allied to theobromine and caffeine.—M. Tschermak presented a paper containing observations on a meteoric iron from the desert of Atacama in Chili. It is a large shield-shaped mass, weighing 103 pounds, and when broken not only shows the usual figures after treatment with acid, but even before the application of acid thin lamellæ of triolite are recognisable, inserted parallel to the hexahedral surfaces and interrupting the octahedral texture. A similar phenomenon is presented by a meteoric iron from Jewell Hill, Madison County, North Carolina.

February 9.—A memoir by Prof. Linnemann, entitled "A Contribution to the further knowledge of Pinakone," was read, and its author claimed the priority in the discovery that formaldehyde is produced by the dry distillation of formiate of lime, and that from it methylic alcohol and other compounds may be obtained. A memoir on the employment of an electrometer for the stroboscopic determination of the elevation of notes, by M. A. von Obermayer, was read.—A paper by Prof. A. Weiss, on the structure and nature of the Diatomaceæ, was communicated. The author stated that the silica of the Diatomacean frustule polarises light, that the Diatomaceæ are composed of innumerable, minute, but perfectly individualised, cells, and that it is to these that the markings of the silicious shells are due.—Dr. E. Klein presented a memoir on the median germ lamella, and its relation to the development of the first blood-vessels and blood corpuscles in the embryo of the fowl, and communicated a paper on the finer nerves of the vaginal mucous membrane, by Dr. A. Chrschtschovitch of Kasan.—Dr. A. Schrauf presented a second series of his mineralogical observations, in which he noticed certain forms of crystals of gypsum, crystals of argentite, the properties and paragenetic relations of the Azorean azorite and pyrrhite, a new mineral from Leadhills, to which he gave the name of eosite, and the characters of vanadite, dechenite, and descloizite.—Dr. S. Stern read a memoir on the theory of the resonance of solid bodies, with reference to the accompanying vibration of the air; and Prof. Reuss presented the first of a series of memoirs by Dr. Manzoni, on Mediterranean Bryozoa. In this the author notices sixteen species (one *Hippothoa*, one *Membranipora*, and fourteen *Lepralie*).

February 16.—A memoir by Dr. U. R. von Jepharovitch, on diaphorite and freieslebenite was read. The author stated that two species, one monoclinic, the other rhombic, have been included under the name of freieslebenite. Their composition is identical, but they differ in density. For the rhombic species he proposes the name of diaphorite.—A memoir was also read on the theory of gases by Prof. L. Boltzmann.—Prof. Reuss communicated a memoir on some fossil star-fishes from the Rhenish grauwacke, by Dr. S. Simonowitsch. Four new species were described, namely, *Asterias acuminatus*, *Aspidosoma petaloides*, and two species forming a new genus, *Xenaster*, *X. margaritatus* and *simplex*.—Prof. von Oppolzer reported upon the calculations undertaken by him for the re-discovery of the lost planet (62) Erato.—Prof. F. Simony made some remarks on the Lacustrine erosion of shore-rocks belonging to various limestone formations.

I. R. Geological Institution, March 28.—Theodor Petersen read a paper on "Cœruleolactin." By this name he designates a new phosphatic mineral, which has been found in the mine of Rindsberg, near Katzenellenbogen (Nassau), in a layer of brown iron ore. It must be placed between Kolaite and Wawellite. The specific gravity is 2.59, the hardness 5.—Variscite. This mineral described by Breithaupt from Plauin had never been analysed. Petersen determined its sp. gr. to be 2.408.—Diabase from Nassau. Exact inquiries have proved that diabase very often contains small quantities of metallic compounds, and is probably the original source of different strata of ores. The felspar in diabase is usually oligoclase, and not as had been generally supposed labradorite.—F. Karrer and Th. Fuchs on the "Relations between the different strata of the marine deposits of the Miocene Vienna Basin." From many new sections which they obtained along the aqueduct now in construction between Vienna and Gloggnitz, the authors endeavour to show that the clay of Baden and that of Geinfaß, the sandstones of Pötzleinsdorf, the limestones (leithakalk), &c., are not deposits of different geological ages, as had hitherto been generally supposed, but represent different facies of the same age, and like the zones of living organisms in the seas of our day, pass into each other without any exact limit.—M. F. Posepny spoke of the penetration of Klastic masses through eruptive or sedi-

mentary rocks. The so-called Glam in the Transylvanian mining districts is an evident example of this phenomenon, and may be compared with the dowkies in N.W. England, and the Gangthonschiefer in the mines of the Harz. An exact study of the phenomenon showed that it originated from very different causes. Sometimes the klastic masses were formed by mechanical friction, in other cases they have been successively deposited by water, sometimes they are masses of mud and pebbles, which penetrated in open veins or cavities of the rock.

BOOKS RECEIVED

ENGLISH.—British Insects; their Form, Structure, and Habits: E. F. Staveley (L. Reeve and Co.).—On Intelligence: H. Paine, translated by T. D. Hays, part I. (L. Reeve and Co.).—The Bijou Gazetteer of the World: W. H. Rosser (Warne and Co.)

AMERICAN AND FOREIGN.—A Synopsis of the Family Unionidæ: Dr. Isaac Lea, New York.—(Through Williams and Norgate).—Lehrbuch der Spärischen Astronomie: Dr. F. Brunow.—Mémoires de la Société de Physique et d'Histoire Naturelle de Genève, tome XX.

DIARY

THURSDAY, APRIL 13.

MATHEMATICAL SOCIETY, at 8.—On Diagrams of the Stresses in Warren and Lattice Girders: Prof. Crofton, F.R.S.—On Quartic Surfaces: Prof. Cayley, F.R.S.

FRIDAY, APRIL 14.

ASTRONOMICAL SOCIETY, at 8.
QUEKETT MICROSCOPICAL CLUB, at 8.

SATURDAY, APRIL 15.

ROYAL SCHOOL OF MINES, at 8.—Geology: Dr. Cobbold.

MONDAY, APRIL 17.

ANTHROPOLOGICAL INSTITUTE, at 8.—The Position of the Australian Languages: Dr. W. H. J. Bleek.—Comparative Table of the Australian Languages: Rev. G. Taplin.—Mental Characteristics of Primitive Man as exhibited in the Aborigines of Australia: Mr. Wake.

TUESDAY, APRIL 18.

STATISTICAL SOCIETY, at 7.45.
ZOOLOGICAL SOCIETY, at 9.—On the Dodo, Part II.:—Notes on the Articulated Skeleton of the Dodo (*Didus ineptus*) in the British Museum.—On Japanese recent Brachiopoda: Mr. Thomas Davidson.
ROYAL INSTITUTION, at 3.—On the Geology of Devonshire, especially of the New Red Sandstone: William Pengelly, F.R.S.

WEDNESDAY, APRIL 19.

METEOROLOGICAL SOCIETY, at 7.—On Deep-sea Thermometers: Staff-Commander John E. Davis, R.N.
SOCIETY OF ARTS, at 8.—On the Economical Construction of Workmen's Dwellings: Dr. J. H. Hallard.

THURSDAY, APRIL 20.

ROYAL SOCIETY, at 8.30.
SOCIETY OF ANTIQUARIES, at 8.30.
CHEMICAL SOCIETY, at 8.
LINNEAN SOCIETY, at 8.
ROYAL INSTITUTION, at 3.—On Sound: Prof. Tyndall.

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